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REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 3-6, 8-13, and 16-20 are pending, of which claims 1, 5, and 10 are independent.

Applicants traverse the rejection of claims 1, 3-6, 8-13, and 16-20 under 35 U.S.C. §102(e) as being anticipated by Shaath (U.S. 6,546,384). A rejection under §102 requires every element of the claim to be included in the reference, either directly or inherently. However, Shaath does not disclose all elements of independent claim 1 and, therefore, does not anticipate the claimed subject matter.

In particular, Shaath fails to distinguish between logical and physical addresses on a storage medium such as a tape. While not acquiescing to any rejection, but to expedite prosecution, the claims are amended to emphasize this distinction, and the following discussion is offered for the Examiner's reference.

A logical address of an item of data refers to the order on the tape in which the data is stored. By way of example, a document contains a number of paragraphs. If one counts the number of paragraphs contained in a given document until a certain paragraph is located, that number could be considered to be the logical address of the certain paragraph. If information in the document is referenced by paragraph number, a reader can count the

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number of paragraphs therein and eventually arrive at the referenced paragraph.

Alternatively, the paragraph could be referenced by physical location, e.g., the certain paragraph is 12 cm from the top of the document. When information is referenced in this manner, the user can easily locate desired information without having to count the number of paragraphs preceding the paragraph of interest, i.e., the certain paragraph.

Now imagine a document which is several thousand pages long and printed out on continuous feed paper. Logically, paragraph 1000 is located after paragraph 999, but it could take a considerable amount of time to locate paragraph 1000 based on the logical address. However, paragraph 1000 may be located 30 m from the top of the document and, using the *physical* location, could be found much more readily and in far less time than using the *logical* location information.

This concept applies in a corresponding manner to the tape drives of the present invention and Shaath as follows. Each time the Shaath device is instructed to store a file on a tape, the device writes a filemark, an index field, and the data to be stored onto a segment of the tape. Thus, a tape which has been written to using the method disclosed in Shaath will comprise a number of data files, each separated by a filemark and an index field. These

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index fields are key to understanding the Shaath device and are constructed in a hierarchy.

Each index field of a data file is comprised of one or more leaf level blocks of indexing data and, if there is more than one leaf level block, at least one root level block of indexing data. A leaf level block is an index block which stores actual addresses of data files and, in a multiple level index field, is considered to be at the highest level in the field. A root level block is the lowest level block in the index field. In a single block index field, the block will be both a leaf level and a root level block. There may also be intermediate or subsidiary level blocks between leaf level blocks and root level blocks. These index blocks store the address of their respective next-higher level or parent blocks.

Each index field contains at least one block at each level in existence between the current position and the beginning of the medium. When a level in the "tree" hierarchy becomes full, a new branch is extended. The files are referred to in each index using a key, which Shaath describes only briefly and an example of which is given as "a". Since the data is also described as data "a", this would appear to be a filename (or reference key) used to identify the relevant file.

The addresses mentioned in Shaath are **logical** addresses, and each address is sequentially numbered. For example, in the

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description of FIG. 3b at column 11, the address is defined as "tape position 0001" and "entry address 0001". Subsequently, in discussing FIG. 3c, reference is made to "tape position 0002" and "entry address 0002". These values are **not** physical addresses, rather the values are sequentially numbered **logical** addresses.

Thus, the index fields provide a reference to the files at a particular level in the hierarchy and to the location of the previous index field. In other words, by reading an index file, it is possible to locate a particular file (by logical address) or to locate the next index file (again by logical address). By moving through the hierarchy of index files, it is possible to locate any particular file located on the tape.

Shaath only briefly mentions the compilation of a central master index containing a full index of all the information stored on a completely full disk and is more relevant to the present invention than the multiple disparate indexes. The construction of the master index is not fully described. However, by combining the information from the disparate index fields, the master index file may be said to contain a key (for example, a file name), elements of the hierarchy, and a logical file location.

Applicants' amended claim 1 requires a full index of all the file location information in a *reserve or centralized storage area*. As noted, the independent claims are amended to recite that the

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data position information comprises logical data position information and physical data position information. Support for this amendment can found, e.g., in the first full paragraph on page 13 of the specification as filed, which states:

The logical data position information located within the data table is arranged such that a logical data position has a corresponding physical position on the magnetic tape, such a physical position being in terms of a physical track number and a physical data set number, such parameters being relative to the BOW and EOW.

and in the sentence bridging pages 13 and 14, which indicates, "The logical data position and the physical data position of this target data is determined by the logical media via the centralized data position information storage area at stage 901". Therefore, there is clear support in the application as filed for the data position information being **both** logical and physical data position information.

Applicants' independent claims make clear the content of the centralized and reserve storage areas and an important distinction between the present invention and the Shaath reference. As described above, Shaath fails to disclose data position information including logical data position information and physical data position information. Thus, Shaath fails to anticipate the presently claimed invention, and the rejection should be withdrawn.

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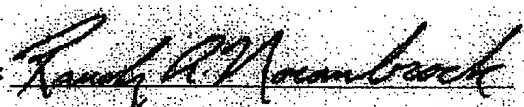
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In view of the foregoing amendments and remarks, favorable reconsideration and allowance of the application are in order, and such action is respectfully requested.

Applicants hereby request a one-month extension of time in which to file this response. Please charge the one-month extension fee of \$120 to Deposit Account No. 08-2025. If in error, the Commissioner is hereby authorized to credit any overpayment or charge any prescribed fees not otherwise provided for, including application processing, extension of time, and extra claims fees, to Deposit Account No. 08-2025.

Respectfully submitted,
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